

gas mixture and first and second outlets, said first outlet transmitting a first gas mixture derived from said intake gas mixture and having a higher oxygen content than the intake gas mixture and said second outlet transmitting a second gas mixture derived from said intake gas mixture and having a lower oxygen content than the intake gas mixture;

*B. Bone*  
a breathing chamber having an internal space therein containing air[,] and including an entry communicating with said internal space and through which the user can enter said internal space;

said second outlet communicating with said internal space and transmitting said second mixture to said internal space so that said second mixture mixes with the air in the internal space; [and]

said first outlet transmitting said first gas mixture to the external atmospheric environment [a location wherein it does not mix with the air in the internal space] ; and

said breathing chamber permitting the communication of air in at least one direction between the external atmospheric environment and the internal space and maintaining the air in the internal space at a pressure generally equalized with the ambient air pressure of the external atmospheric environment and at a concentration of oxygen substantially lower than said external ambient oxygen concentration.

2. (Amended) The invention according to claim 1 and  
said inlet of said gas-separation [oxygen-extraction] device [communicating with  
said internal space and taking] intaking the intake gas mixture from the air in said  
space.

3.(Amended) The invention according to claim 1 and  
said inlet of said gas-separation [oxygen-extraction] device [not communicating  
with said internal space and taking] intaking the intake gas mixture from the air [outside  
said space] of said external atmospheric environment.

4.(Amended) The invention according to claim 1 and  
said [internal space communicating with the atmosphere outside said] breathing  
chamber having [through] vents therein, said vents providing for flow of air between  
said external atmospheric environment and said internal space [in said chambers  
structure].

5.(Amended) The invention according to claim 4 and  
said vents having apertures therein through which [valves for creating pressure  
difference between the] air can flow in either direction between [inside] said internal

space and said external atmospheric environment [atmosphere outside said internal space].

Sub B2  
6. (Amended) A system for use in an external atmospheric environment of air at an external ambient air pressure for providing a low-oxygen environment for a user, said system comprising:

02  
a chamber comprising a door and wall structure defining a closed space into which the user can enter through the door [, said door being selectively closable so that when closed, the chamber is substantially isolated from the outside environment];

a gas processing device having an intake and first and second outlets, said device intaking a gas mixture through said intake and emitting a reduced oxygen gas mixture having a lower concentration of oxygen than said gas mixture through said first outlet and emitting an enriched-oxygen gas mixture having a greater concentration of oxygen than said gas mixture through said second outlet;

said first outlet being connected with said chamber so that the reduced-oxygen gas mixture is emitted into said closed space inside the chamber and mixes with the air therein causing the air in the closed space to have a lower oxygen concentration

52  
than the air outside the chamber;

said chamber having apertures therein [in the wall structure thereof] allowing communication therethrough of air in the outside environment with air in the chamber so that the air in the closed space remains at a pressure substantially equal to the external ambient air pressure and at said lower oxygen concentration [ , said apertures being substantially the sole communication between the closed space and the outside environment when the door is closed];

68  
said gas processing device comprising [a pump receiving the gas mixture from the inlet and] a separation unit to which the intake gas mixture from the inlet is transmitted, said separation unit separating the intake gas mixture into a reduced oxygen gas mixture with an oxygen concentration lower than said intake gas mixture and an enriched oxygen gas mixture with an oxygen concentration higher than said intake gas mixture, said separation unit having [with] a reduced oxygen mixture conduit through which said reduced oxygen gas mixture is transmitted and an enriched oxygen mixture conduit through which said enriched oxygen gas mixture is transmitted;

said first outlet being operatively associated with said reduced oxygen mixture conduit and receiving said reduced oxygen gas mixture therefrom, said second outlet being operatively associated with said enriched oxygen mixture conduit and receiving said enriched oxygen gas mixture therefrom and releasing said enriched oxygen gas

Be  
cancel.

mixture to the external atmospheric environment [a location removed from said chamber and said apertures].

<sup>12</sup>  
7.(Amended) The invention according to claim <sup>11</sup>6 and

said separation unit comprising

a housing defining a space therein and having a separating membrane [block] supported therein [in said housing and] dividing the space into a retentate space and a permeate space, and

a [said] pump pumping said intake gas mixture across said membrane [block] and said intake gas mixture to be separated thereby [separating it] into oxygen enriched permeate in said permeate space which is transmitted to said second outlet [being disposed outside said chamber] and oxygen depleted retentate in said retentate space which is transmitted to said first outlet and [being] released inside said chamber.

<sup>13</sup>  
8.(Amended) The invention according to claim <sup>11</sup>6 and

said separation unit comprising a pump applying said intake gas mixture to a pressure swing adsorption device having [employing] molecular sieve material which adsorbs [adsorbes] nitrogen from the intake [intaking] gas mixture being compressed by said pump, leaving the enriched oxygen gas mixture which is transmitted to said

enriched oxygen conduit and [whereby the remaining oxygen concentrate] is discharged  
to the external atmospheric environment outside said chamber and said adsorption  
device on depressurization releasing a [the] nitrogen concentrate gas which is  
transmitted as said reduced oxygen gas mixture to said reduced oxygen conduit [being  
recovered through the depressurization of the nitrogen-saturated molecular sieve  
material] and is released into said chamber.

<sup>14</sup>  
9. (Amended) The invention according to claim <sup>11</sup>6 and

02  
said separation unit comprising a pump applying said intake gas mixture to a  
pressure swing adsorption device having [employing] molecular sieve material which  
adsorbs [adsorbes] oxygen from the intake [intaking] gas mixture being compressed by  
said pump, leaving the reduced oxygen gas mixture which is transmitted to said reduced  
oxygen conduit and [whereby the remaining nitrogen concentrate is] released into said  
chamber and said adsorption device on depressurization releasing an [the] oxygen  
concentrate gas which is transmitted as said enriched oxygen gas mixture to said  
enriched oxygen conduit [being recovered through the depressurization of the oxygen-  
saturated molecular sieve material] and is discharged to the outside environment  
[disposed outside the system].

<sup>15</sup>  
~~10~~. (Amended) The invention according to claim <sup>11</sup>~~6~~ and

said intake communicating [being connected] with said closed space inside the chamber so that the intake gas mixture is drawn from the air in the chamber.

<sup>17</sup>  
~~11~~. (Amended) The invention according to claim <sup>11</sup>~~6~~ and

said intake intaking [not communicating with said chamber so that] the intake gas mixture from the air of the external atmospheric environment outside the chamber [is drawn for separation].

<sup>19</sup>  
~~12~~. (Amended) The invention according to claim <sup>11</sup>~~6~~ and

said apertures providing openings [of at least 2 square centimeters] in said wall structure.

<sup>16</sup>  
~~13~~. (Amended) The invention according to claim <sup>15</sup>~~10~~ and

said apertures in [providing openings for reinstating atmospheric pressure inside] said chamber being located in an upper portion of the chamber.

<sup>18</sup>  
14. (Amended) The invention according to claim <sup>17</sup>~~11~~ and

said apertures in [providing openings for equalizing atmospheric pressure inside]  
said chamber being located in a lower portion of the chamber.

<sup>20</sup>  
~~15.~~ (Amended) The invention according to claim <sup>11</sup>~~6~~ and

*cancel.*  
said chamber being part of a vehicle and said user being an operator of said  
vehicle [is a structure inside means of transportation selected from the group consisting  
of: motor vehicles, airplanes and helicopters, space ships, ships and submarines];

said system selectively supplying a [used for] hypoxic environment to said  
operator so as maintain the alertness of said operator [training, fighting sleepiness and  
drowsiness and increasing attentiveness of operators of said means of transportation].

*cancel.*  
~~17. (Amended) A system for hypoxic training and therapy simulating an  
oxygen-depleted mountain air of a higher altitude [different altitudes], said system  
comprising:~~

*cancel.*  
~~a structure defining a closed space therein. [inside a] said structure having a door  
and ventilating openings through which air can pass so that air in the closed space and  
air outside said structure remain at substantially equal pressures;~~

~~an oxygen content-reducing device separating an intake air mixture drawn from~~



B3  
comp.  
said [ambient] air outside said structure into an oxygen concentrate and a nitrogen concentrate;

said oxygen content-reducing device transmitting said [having a] nitrogen concentrate through an outlet communicating with said closed space and causing said [supplying] air in said closed space to be reduced in oxygen content relative to the air outside the structure, said device transmitting said [a gas inlet receiving air for separation, and an] oxygen concentrate through a second outlet to a location outside said structure [not communicating with said closed space];

a<sup>3</sup>  
a control unit controlling the operation [to control and regulate the performance] of said oxygen content-reducing device;

an oxygen content sensor [with oxygen depletion alarm for] monitoring an oxygen content level inside said closed space and communicating with said control unit [;] so that the oxygen content of the air in the closed space is maintained at a desired level.

<sup>22</sup>  
18.(Amended) The invention according to claim <sup>21</sup>17 and

said system having a humidity and temperature control unit [for] regulating humidity and temperature of the air inside said closed space.

<sup>23</sup>  
~~19~~.(Amended) The invention according to claim <sup>21</sup>~~17~~ and

said system having a pulse oximeter [for] monitoring the user's [users] pulse rate and blood saturation with oxygen[.]; said oximeter transmitting data to said control unit; and

said control unit regulating the oxygen content of the air in the closed space responsive to said data [for computerized processing and regulating oxygen content level inside said closed space in accordance to users condition].

<sup>24</sup>  
~~20~~.(Amended) The invention according to claim <sup>21</sup>~~17~~ and

[said system having] physical exercise equipment inside said closed space[, said system used for hypoxic training of humans and mammals in order to increase their strength, vitality and resistance to various diseases].

---

<sup>25</sup>~~22~~.(Amended) The invention according to claim <sup>21</sup>~~17~~ and

said structure defining said closed space being a part of a [is a space inside an entire] building [or structure], and

said oxygen content-reducing device is incorporated into an air-conditioning system of said building [or structure] and using [the systems] ventilation ducts of the

*at*  
*me.*  
building [and equipment] for delivery of said nitrogen concentrate [hypoxic gas mixture] to said closed space .

Please add the following new claims:

*6* ~~23.~~ The invention according to claim 1 and  
the air in the internal space having an oxygen concentration of about 7 to 11%.

*7*  
~~24.~~ The invention according to claim 1 and  
exercise equipment for training of said user in said internal space of said  
*05* breathing chamber.

*8*  
~~25.~~ The invention according to claim *7* ~~24~~ wherein said user is a non-human  
mammal.

*9*  
~~26.~~ The invention according to claim 1 and  
the air in the internal space having an oxygen concentration of about 11 to 15%.

*10*  
~~27.~~ The invention according to claim 1 and  
said entry having a doorjamb structure defining an entry opening in the chamber